72878

Access DB# _____

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: (STIC) Richard Schnizer Examiner #: 76557 Date: 8/8/02
Art Unit: 1635 Phone Number 306-5441 Serial Number: 09/786,055
Mail Box and Bldg/Room Location: 11E12 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

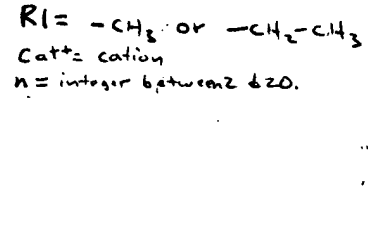
Title of Invention: PHOSPHOEPOXIDES

Inventors (please provide full names): Christian Belmant, Jean-Jacque Fournie, Marc Bonneville, Marie-Alix Peyrat

Earliest Priority Filing Date: 9/1/98

***For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.**

Please search for the following structures:



R1, Cat+, and n as defined above

****

STAFF USE ONLY	Type of Search	Vendors and cost where applicable
Searcher: Point of Contact: Alexandra Waclawiw Technical Info. Specialist CM1 6A02 Tel: 308-4491	NA Sequence (#)	STN $320.00
Searcher Phone #:	AA Sequence (#)	Dialog
Searcher Location:	Structure (#) 1	Questel/Orbit
Date Searcher Picked Up: 8-12-02	Bibliographic	Dr.Link
Date Completed: 8-12-02	Litigation	Lexis/Nexis
Searcher Prep & Review Time: 18	Fulltext	Sequence Systems
Clerical Prep Time:	Patent Family	WWW/Internet
Online Time: 38	Other	Other (specify)

PTO-1590 (8-01)

PAP 41 27 +4 35

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=> d his

     (FILE 'HCAOLD' ENTERED AT 09:03:30 ON 12 AUG 2002)
               DEL HIS Y

     FILE 'REGISTRY' ENTERED AT 09:04:05 ON 12 AUG 2002
               ACT RICHARD/A
              ---------
L1              STR
L2            45 SEA FILE=REGISTRY SSS FUL L1
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L3             1 S 1492-08-6
L4            44 S L2 NOT L3
L5            33 S L4 AND (CAPLUS OR CA)/LC
L6             0 S L4 AND USPATFULL/LC

     FILE 'HCAOLD' ENTERED AT 09:05:07 ON 12 AUG 2002

     FILE 'HCAPLUS' ENTERED AT 09:05:21 ON 12 AUG 2002
L7            15 S L2/P OR L2(L) (PREPN OR PREPAR? OR MANUF? OR MFG# OR PREP/RL)
L8            17 S L4
L9            22 S L7 OR L8

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L10            3 S L4
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USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
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STRUCTURE FILE UPDATES:    9 AUG 2002  HIGHEST RN 443534-23-4
DICTIONARY FILE UPDATES:   9 AUG 2002  HIGHEST RN 443534-23-4

TSCA INFORMATION NOW CURRENT THROUGH January 7, 2002

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

Crossover limits have been increased.  See HELP CROSSOVER for details.

Calculated physical property data is now available.  See HELP PROPERTIES
for more information.  See STNote 27, Searching Properties in the CAS
Registry File, for complete details:
http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf

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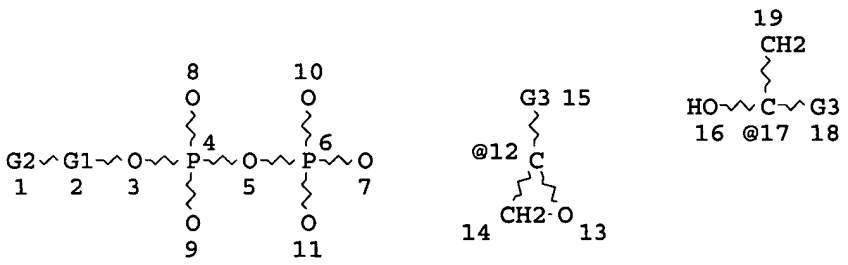


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REP G1=(2-20) CH2
VAR G2=12/17
VAR G3=ME/ET
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS  19

STEREO ATTRIBUTES: NONE
L2           45 SEA FILE=REGISTRY SSS FUL L1

100.0% PROCESSED  18365 ITERATIONS                          45 ANSWERS
SEARCH TIME: 00.00.07


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L3            1 SEA FILE=REGISTRY ABB=ON  PLU=ON  1492-08-6
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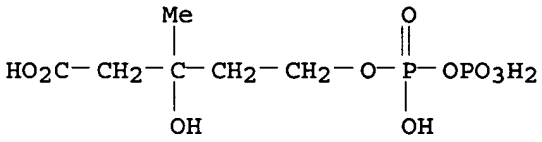
L3 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2002 ACS
RN **1492-08-6** REGISTRY
CN 2,4-Dioxa-1,3-diphosphanonan-9-oic acid, 1,1,3,7-tetrahydroxy-7-methyl-, 1,3-dioxide (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Pyrophosphoric acid, 5-ester with 3,5-dihydroxy-3-methylvaleric acid (8CI)
CN Valeric acid, 3,5-dihydroxy-3-methyl-, 5-(trihydrogen pyrophosphate) (8CI)
CN Valeric acid, 3,5-dihydroxy-3-methyl-, 5-pyrophosphate (6CI, 7CI)
OTHER NAMES:
CN 5-Pyrophosphomevalonic acid
CN Mevalonic 5-pyrophosphate
CN Mevalonic acid 5-diphosphate
CN Mevalonic acid 5-pyrophosphate
CN Mevalonic acid pyrophosphate
CN Pyrophosphomevalonic acid
FS 3D CONCORD
MF C6 H14 O10 P2
CI COM
LC STN Files: BEILSTEIN*, BIOSIS, CA, CAOLD, CAPLUS, TOXCENTER
(*File contains numerically searchable property data)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

55 REFERENCES IN FILE CA (1967 TO DATE)
55 REFERENCES IN FILE CAPLUS (1967 TO DATE)
19 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

→ one of the answers from struct. search. Too many references. See L4

=> d his l4

(FILE 'REGISTRY' ENTERED AT 09:04:05 ON 12 AUG 2002)
L4 44 S L2 NOT L3 structure search numbers above structure (used to limit number of references)

=> fil hcaplus
FILE 'HCAPLUS' ENTERED AT 09:06:25 ON 12 AUG 2002
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
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FILE COVERS 1907 - 12 Aug 2002 VOL 137 ISS 7

FILE LAST UPDATED: 11 Aug 2002 (20020811/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

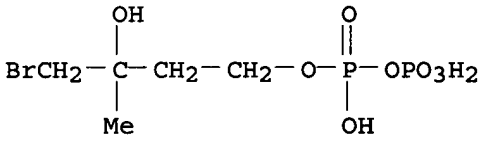
CAS roles have been modified effective December 16, 2001. Please check your SDI profiles to see if they need to be revised. For information on CAS roles, enter HELP ROLES at an arrow prompt or use the CAS Roles thesaurus (/RL field) in this file.
'OBI' IS DEFAULT SEARCH FIELD FOR 'HCAPLUS' FILE

=> d que nos l9
L1 STR
L2 45 SEA FILE=REGISTRY SSS FUL L1
L3 1 SEA FILE=REGISTRY ABB=ON PLU=ON 1492-08-6
L4 44 SEA FILE=REGISTRY ABB=ON PLU=ON L2 NOT L3
L7 15 SEA FILE=HCAPLUS ABB=ON PLU=ON L2/P OR L2(L) (PREPN/OBI OR PREPAR?/OBI OR MANUF?/OBI OR MFG#/OBI OR PREP/RL)
L8 17 SEA FILE=HCAPLUS ABB=ON PLU=ON L4
L9 22 SEA FILE=HCAPLUS ABB=ON PLU=ON L7 OR L8

=> d .ca hitstr l9 1-22

L9 ANSWER 1 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2002:451578 HCAPLUS
DOCUMENT NUMBER: 137:61783
TITLE: Synaptic transfer by human .gamma..delta. T cells stimulated with soluble or cellular antigens
AUTHOR(S): Espinosa, Eric; Tabiasco, Julie; Hudrisier, Denis; Fournie, Jean-Jacques
CORPORATE SOURCE: Institut National de la Sante et de la Recherche Medicale, Centre Hospitalier Universitaire Purpan, Toulouse, 31024, Fr.
SOURCE: Journal of Immunology (2002), 168(12), 6336-6343
CODEN: JOIMA3; ISSN: 0022-1767
PUBLISHER: American Association of Immunologists
DOCUMENT TYPE: Journal
LANGUAGE: English
AB B, .alpha..beta. T, and NK lymphocytes establish immunol. synapses (IS) with their targets to enable recognition. Transfer of target cell-derived Ags together with proximal mols. onto the effector cell appears also to occur through synapses. Little is known about the mol. basis of this transfer, but it is assumed to result from Ag receptor internalization. Because human .gamma..delta. T cells recognize sol. non-peptidic phosphoantigens as well as tumor cells such as Daudi, it is unknown whether they establish IS with, and ext. mols. from, target cells. Using flow cytometry and confocal microscopy, the authors show in this work that Ag-stimulated human V.gamma.9/V.delta.2 T cells conjugate to, and perform mol. transfer from, various tumor cell targets. The mol. transfer appears to be linked to IS establishment, evolves in a dose-dependent manner in the presence of either sol. or cellular Ag, and requires .gamma..delta. TCR ligation, Src family kinase signaling, and participation of the actin cytoskeleton. Although CD45 exclusion characterized the IS performed by .gamma..delta. T cells, no obvious capping of the .gamma..delta. TCR was detected. The synaptic transfer mediated by .gamma..delta. T cells involved target mols. unrelated to the cognate Ag and occurred independently of MHC class I expression by target cells. From these observations, the authors conclude that despite the particular features of .gamma..delta. T cell activation, both synapse formation and mol. transfer

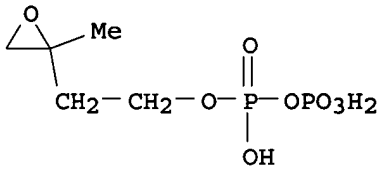
of determinants belonging to target cell characterize .gamma..delta. T cell recognition of Ags.
CC 15-2 (Immunochemistry)
IT 358-71-4, Isopentenyl pyrophosphate 252663-87-9 **303102-05-8**
RL: BSU (Biological study, unclassified); BIOL (Biological study) (synaptic transfer from target cell to human .gamma..delta. T-cells stimulated with)
IT **303102-05-8**
RL: BSU (Biological study, unclassified); BIOL (Biological study) (synaptic transfer from target cell to human .gamma..delta. T-cells stimulated with)
RN 303102-05-8 HCAPLUS
CN Diphosphoric acid, mono(4-bromo-3-hydroxy-3-methylbutyl) ester (9CI) (CA INDEX NAME)



REFERENCE COUNT: 67 THERE ARE 67 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 2 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2001:463707 HCAPLUS
DOCUMENT NUMBER: 135:207791
TITLE: Characterization of Phosphoantigens by High-Performance Anion-Exchange Chromatography-Electrospray Ionization Ion Trap Mass Spectrometry and Nanoelectrospray Ionization Ion Trap Mass Spectrometry
AUTHOR(S): Pont, Frederic; Luciani, Beatrice; Belmant, Christian; Fournie, Jean Jacques
CORPORATE SOURCE: Service de Spectrometrie de Masse de l'IFR 30, CHU Purpan, Toulouse, 31024, Fr.
SOURCE: Analytical Chemistry (2001), 73(15), 3562-3569
CODEN: ANCHAM; ISSN: 0003-2700
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB New phosphorylated microbial metabolites referred to as phosphoantigens activate immune responses in humans. Although these mols. have leading applications in medical research, no direct method allows their rapid and unambiguous structural identification. Here, we interfaced online high performance anion-exchange chromatog. (HPAEC) with electrospray ionization ion trap mass spectrometry (ESI-ITMS) to identify such pyrophosphorylated mols. A self-regenerating anion suppressor located upstream of electrospray ionization enabled the simultaneous detection of pyrophosphoester by conductimetry, UV and MS. By HPAEC-ITMS and HPAEC-ITMS2, a single run permitted characterization of ref. phosphoantigens and of related structures. Although all compds. were resolved by HPAEC, MS enabled their detection and identification by [M - H]- and fragment ions. Isobaric phosphoantigen analogs were also sepd. by HPAEC and distinguished by MS2. The relevance of this device was demonstrated for phosphoantigens anal. in human urine and plasma. Furthermore, identification of natural phosphoantigens by automatically generated 2D mass spectra from nano-ESI-ITMS is presented. This last technique permits the simultaneous performance of mol. screening of

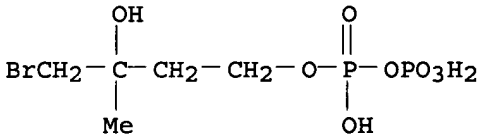
natural phosphoantigen exts. and their identification.
CC 9-16 (Biochemical Methods)
Section cross-reference(s): 15
IT 358-71-4 372-97-4, Farnesyl pyrophosphate 763-10-0, Geranyl pyrophosphate 96555-67-8 **115914-67-5** 357426-54-1
RL: ANT (Analyte); PRP (Properties); ANST (Analytical study)
(characterization of phosphoantigens by anion-exchange HPLC-electrospray ionization ion trap mass spectrometry and nanoelectrospray ionization ion trap mass spectrometry)
IT **115914-67-5**
RL: ANT (Analyte); PRP (Properties); ANST (Analytical study)
(characterization of phosphoantigens by anion-exchange HPLC-electrospray ionization ion trap mass spectrometry and nanoelectrospray ionization ion trap mass spectrometry)
RN 115914-67-5 HCAPLUS
CN Diphosphoric acid, mono[2-(2-methyloxiranyl)ethyl] ester (9CI) (CA INDEX NAME)



REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 3 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2001:411550 HCAPLUS
DOCUMENT NUMBER: 135:179341
TITLE: Chemical synthesis and biological activity of bromohydrin pyrophosphate, a potent stimulator of human .gamma..delta. T cells
AUTHOR(S): Espinosa, Eric; Belmant, Christian; Pont, Frederic; Luciani, Beatrice; Poupot, Remy; Romagne, Francois; Brailly, Herve; Bonneville, Marc; Fournie, Jean-Jacques
CORPORATE SOURCE: INSERM U395, CHU Purpan, Toulouse, 31024, Fr.
SOURCE: Journal of Biological Chemistry (2001), 276(21), 18337-18344
CODEN: JBCHA3; ISSN: 0021-9258
PUBLISHER: American Society for Biochemistry and Molecular Biology
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Small phosphorylated metabolites from mycobacteria stimulate human .gamma..delta. T lymphocytes. Although such phosphoantigens could prove useful in the compn. of vaccines involving .gamma..delta. T cell-mediated immunity, their very low abundance in natural sources limits such applications. Here, we describe the chem. prodn., purifn., and bioactivity of a phosphorylated bromohydrin (BrHPP) analog that mimics the biol. properties of natural phosphoantigens. This compd. can be obtained in gram amts., is easy to detect, and is of high stability in aq. solns. Whereas unspecific binding of BrHPP to a wide panel of cell surface receptors is not detected even at micromolar concns., nanomolar concns. specifically trigger effector responses of human .gamma..delta. T lymphocytes. Thus, BrHPP is a novel mol. enabling potent

immunostimulation of human .gamma..delta. T lymphocytes.
CC 15-2 (Immunochemistry)
IT **303102-05-8P**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); SPN (Synthetic preparation); BIOL (Biological study); **PREP (Preparation)**
(chem. synthesis and biol. activity of bromohydrin pyrophosphate, a potent stimulator of human .gamma..delta. T cells)
IT **303102-05-8P**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); SPN (Synthetic preparation); BIOL (Biological study); **PREP (Preparation)**
(chem. synthesis and biol. activity of bromohydrin pyrophosphate, a potent stimulator of human .gamma..delta. T cells)
RN 303102-05-8 HCAPLUS
CN Diphosphoric acid, mono(4-bromo-3-hydroxy-3-methylbutyl) ester (9CI) (CA INDEX NAME)



REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 4 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2001:401111 HCAPLUS
DOCUMENT NUMBER: 135:165761
TITLE: Differential activation of human .gamma..delta. cells by nonpeptide phosphoantigens
AUTHOR(S): Sireci, Guido; Espinosa, Eric; Di Sano, Caterina; Dieli, Francesco; Fournie, Jean-Jacques; Salerno, Alfredo
CORPORATE SOURCE: Department of Biopathology, University of Palermo, Palermo, Italy
SOURCE: European Journal of Immunology (2001), 31(5), 1628-1635
CODEN: EJIMAF; ISSN: 0014-2980
PUBLISHER: Wiley-VCH Verlag GmbH
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Human T cells expressing V.gamma.9/V.delta.2-encoded TCR recognize several nonpeptide phosphoantigens in the absence of major histocompatibility complex restriction. As these cells respond differentially to increasing concns. of structurally related phosphoantigens, such ligands constitute agonists of different strengths. By analyzing early cellular events and late effector responses of .gamma..delta. T cells, we compared their patterns of stimulation by weak, medium and strong phosphoantigen agonists. We found that, although the early metabolic activation as assessed by cytosensor microphysiometry directly reflects the intensity of subsequent effector response by .gamma..delta. cells, TCR down-modulation is dissocd. from the latter. Weak and mid-range phosphoantigen agonists induce a time- and dose-dependent down-modulation of the .gamma..delta. TCR, whereas strong phosphoantigen agonists induce little or no TCR down-regulation. This indicates that .gamma..delta. TCR down-modulation does not match the extent of TCR signaling as assessed by microphysiometry

or conventional effector responses (TNF-.alpha. prodn. and cytotoxicity). This differential pattern of .gamma..delta. cell activation by phosphoantigens could explain the stronger potencies of some of these agonists.

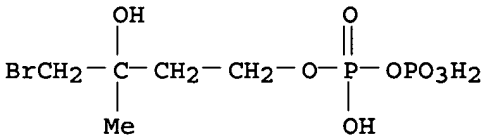
CC 15-2 (Immunochemistry)

IT 358-71-4, Isopentenyl pyrophosphate 21317-51-1 252663-87-9 **303102-05-8**
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(differential activation of human .gamma..delta. cells by nonpeptide phosphoantigens)

IT **303102-05-8**
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(differential activation of human .gamma..delta. cells by nonpeptide phosphoantigens)

RN 303102-05-8 HCAPLUS

CN Diphosphoric acid, mono(4-bromo-3-hydroxy-3-methylbutyl) ester (9CI) (CA INDEX NAME)



REFERENCE COUNT: 49 THERE ARE 49 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 5 OF 22 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2001:119873 HCAPLUS

DOCUMENT NUMBER: 137:92275

TITLE: A chemical basis for selective recognition of nonpeptide antigens by human .delta. T cells. [Erratum to document cited in CA133:320819]

AUTHOR(S): Belmant, Christian; Espinosa, Eric; Halary, Franck; Tang, Yong; Peyrat, Marie-Alix; Sicard, Helene; Kozikowski, Aalan; Buelow, Roland; Poupot, Remy; Bonneville, Marc; Fournie, Jean-Jacques

CORPORATE SOURCE: INSERM U395, CHU Purpan, Toulouse, 31024, Fr.

SOURCE: FASEB Journal (2000), 14(13), 2128
CODEN: FAJOEC; ISSN: 0892-6638
URL: http://www.fasebj.org/cgi/doi/10.1096/fj.99-0909fje

PUBLISHER: Federation of American Societies for Experimental Biology

DOCUMENT TYPE: Journal

LANGUAGE: English

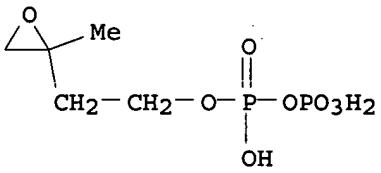
AB The correct URL link (web address) is http://www.fasebj.org/cgi/doi/10.1096/fj.99-0909fje.

CC 15-2 (Immunochemistry)

IT 358-71-4, Isopentenyl pyrophosphate 2920-99-2 **115914-67-5** 202268-26-6 252663-87-9 303102-02-5 **303102-03-6** **303102-04-7** **303102-05-8** **303102-06-9** 303102-07-0 303102-08-1 303102-09-2 303102-10-5 303102-11-6
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(structure-function anal. of T-cell recognition of (Erratum))

IT **115914-67-5 303102-03-6 303102-04-7**
303102-05-8 303102-06-9
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(structure-function anal. of T-cell recognition of (Erratum))

RN 115914-67-5 HCAPLUS
CN Diphosphoric acid, mono[2-(2-methyloxiranyl)ethyl] ester (9CI) (CA INDEX NAME)



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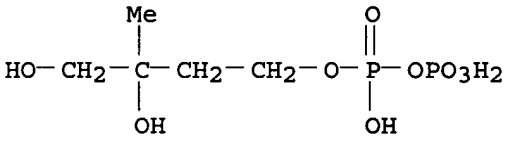

RN 303102-04-7 HCAPLUS
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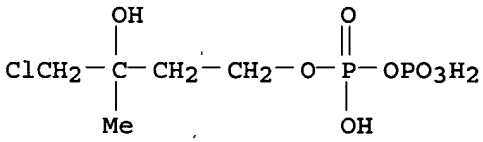

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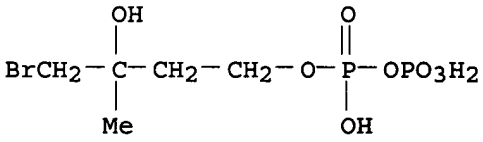

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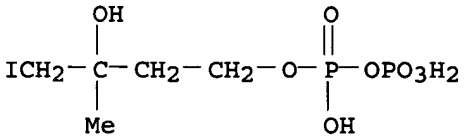


L9 ANSWER 6 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2000:655984 HCAPLUS
DOCUMENT NUMBER: 133:320819
TITLE: A chemical basis for selective recognition of nonpeptide antigens by human .delta. T cells
AUTHOR(S): Belmant, Christian; Espinosa, Eric; Halary, Franck; Tang, Yong; Peyrat, Marie-Alix; Sicard, Helene; Kozikowski, Alan; Buelow, Roland; Poupot, Remy; Bonneville, Marc; Fournie, Jean-Jacques
CORPORATE SOURCE: INSERM U395, CHU Purpan, Toulouse, 31024, Fr.
SOURCE: FASEB Journal (2000), 14(12), 1669-1670
CODEN: FAJOEC; ISSN: 0892-6638
PUBLISHER: Federation of American Societies for Experimental Biology
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Human .gamma..delta. T lymphocytes activate their immune function upon TCR-mediated recognition of antigens not assocd. with MHC mols. Because different non-peptide phosphorylated antigens (phosphoantigens) are selectively recognized by .gamma..delta. T cells, the authors clarified its mol. basis through the structure-function relation of novel synthetic phosphoantigens.

CC 15-2 (Immunochemistry)

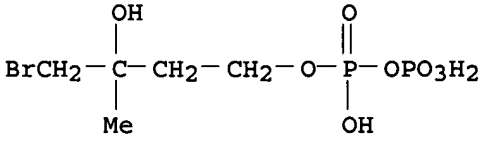
IT **303102-05-8**
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); PROC (Process)
(structure-function anal. of T-cell recognition of)

IT 358-71-4, Isopentenyl pyrophosphate 2920-99-2 **115914-67-5**
202268-26-6 252663-87-9 303102-02-5 **303102-03-6**
303102-04-7 **303102-06-9** 303102-07-0 303102-08-1
303102-09-2 303102-10-5 303102-11-6
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(structure-function anal. of T-cell recognition of)

IT **303102-05-8**
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); PROC (Process)
(structure-function anal. of T-cell recognition of)

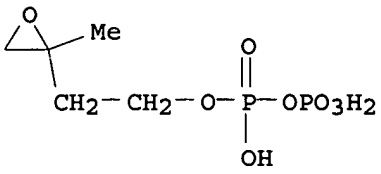
RN 303102-05-8 HCAPLUS

CN Diphosphoric acid, mono(4-bromo-3-hydroxy-3-methylbutyl) ester (9CI) (CA INDEX NAME)

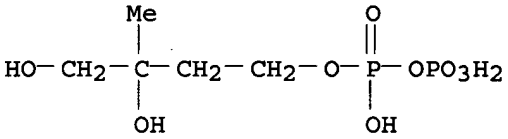


IT **115914-67-5 303102-03-6 303102-04-7**
303102-06-9
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(structure-function anal. of T-cell recognition of)

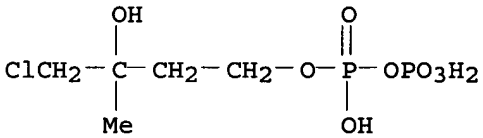
RN 115914-67-5 HCAPLUS
CN Diphosphoric acid, mono[2-(2-methyloxiranyl)ethyl] ester (9CI) (CA INDEX NAME)



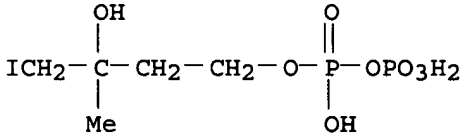
RN 303102-03-6 HCAPLUS
CN Diphosphoric acid, mono(3,4-dihydroxy-3-methylbutyl) ester (9CI) (CA INDEX NAME)



RN 303102-04-7 HCAPLUS
CN Diphosphoric acid, mono(4-chloro-3-hydroxy-3-methylbutyl) ester (9CI) (CA INDEX NAME)



RN 303102-06-9 HCAPLUS
CN Diphosphoric acid, mono(3-hydroxy-4-iodo-3-methylbutyl) ester (9CI) (CA INDEX NAME)



L9 ANSWER 7 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2000:161295 HCAPLUS
DOCUMENT NUMBER: 132:194500
TITLE: Preparation of phosphoepoxides and their application

in activating T.gamma.9.delta.2 lymphocytes of primates

INVENTOR(S): Belmant, Christian; Fournie, Jean-jacques; Bonneville, Marc; Peyrat, Marie-alix

PATENT ASSIGNEE(S): Institut National De La Sante Et De La Recherche Medicale, Fr.

SOURCE: PCT Int. Appl., 52 pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: French

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000012519	A1	20000309	WO 1999-FR2057	19990827
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
FR 2782722	A1	20000303	FR 1998-10914	19980901
FR 2782722	B1	20010112		
AU 9954265	A1	20000321	AU 1999-54265	19990827
EP 1109818	A1	20010627	EP 1999-940246	19990827
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2002523515	T2	20020730	JP 2000-567540	19990827

PRIORITY APPLN. INFO.: FR 1998-10914 A 19980901
WO 1999-FR2057 W 19990827

OTHER SOURCE(S): CASREACT 132:194500

AB The invention concerns compds. comprising at least a phosphoepoxide group of formula R1C(CH2O)(CH2)nOP(O)(O-Cat+)OP(O)(O-Cat+)O- (R1 = Me, Et; Cat+ = org. or mineral cation; n = 2-20). The invention also concerns their prepn. methods and applications, particularly in therapy and for activating T.gamma.9.delta.2 lymphocytes of primates. For example, the Na salt of 3,4-epoxy-3-methylbutyl diphosphate was prepd. in 4 steps: (1) prepn. of 3-methyl-3-butenyl tosylate from tosyl chloride and isopentenol; (2) prepn. of the ammonium salt of 3-methyl-3-butenyl diphosphate from tris(tetrabutylammonium) hydrogen pyrophosphate and 3-methyl-3-butenyl tosylate; (3) the bromination of the 3-methyl-3-butenyl diphosphate by bromine water; and (4) cyclization in aq. ammonia.

IC ICM C07F009-655
ICS C07H019-10; C12N005-06; A61K031-665; A61K049-00

CC 29-7 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 1

IT **259793-68-5P**, 3,4-Epoxy-3-methylbutyl tetrasodium triphosphate
259793-69-6P, .alpha.,.gamma.-Bis(3,4-epoxy-3-methylbutyl) trisodium triphosphate **259793-70-9P**, .gamma.-(3,4-Epoxy-3-methylbutyl) trisodium uridine-5'-triphosphate
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); IMF (Industrial manufacture); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); **PREP (Preparation)**; USES (Uses)
(**prepn**. and activation of T.gamma.9.delta.2 lymphocytes by)

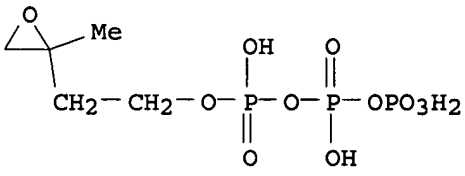
IT **259793-71-0P**, Triammonium 3-(bromomethyl)-3-hydroxybutyl

diphosphate **259793-73-2P**, Tetraammonium 3-(bromomethyl)-3-hydroxybutyl triphosphate **259793-75-4P**, Triammonium .alpha.,.gamma.-bis(3-(bromomethyl)-3-hydroxybutyl) triphosphate **259793-77-6P**, Triammonium .gamma.-(3-hydroxy-3-(iodomethyl)butyl) uridine 5'-triphosphate
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(**prepn**. and cyclization to epoxide)

IT **259793-67-4P**, 3,4-Epoxy-3-methylbutyl trisodium diphosphate
RL: ADV (Adverse effect, including toxicity); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); IMF (Industrial manufacture); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); **PREP (Preparation)**; USES (Uses)
(**prepn**., toxicity and activation of T.gamma.9.delta.2 lymphocytes by)

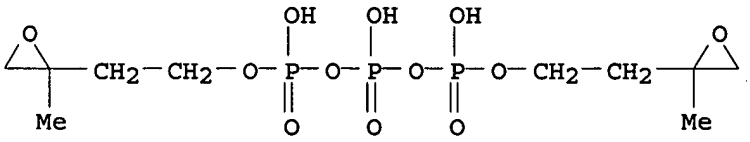
IT **259793-68-5P**, 3,4-Epoxy-3-methylbutyl tetrasodium triphosphate **259793-69-6P**, .alpha.,.gamma.-Bis(3,4-epoxy-3-methylbutyl) trisodium triphosphate **259793-70-9P**, .gamma.-(3,4-Epoxy-3-methylbutyl) trisodium uridine-5'-triphosphate
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); IMF (Industrial manufacture); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); **PREP (Preparation)**; USES (Uses)
(**prepn**. and activation of T.gamma.9.delta.2 lymphocytes by)

RN 259793-68-5 HCAPLUS
CN Triphosphoric acid, P-[2-(2-methyloxiranyl)ethyl] ester, tetrasodium salt (9CI) (CA INDEX NAME)



●4 Na

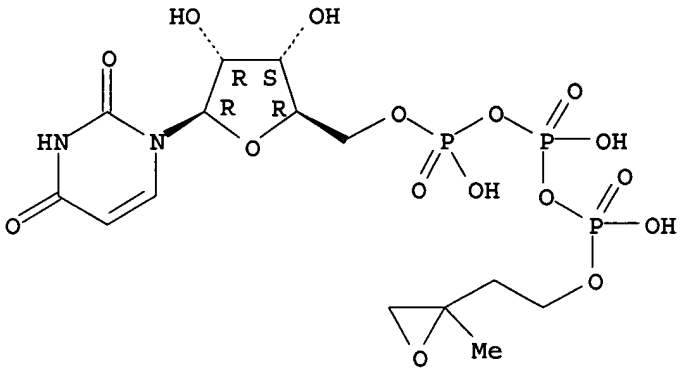
RN 259793-69-6 HCAPLUS
CN Triphosphoric acid, P,P''-bis[2-(2-methyloxiranyl)ethyl] ester, trisodium salt (9CI) (CA INDEX NAME)



●3 Na

RN 259793-70-9 HCAPLUS
CN Uridine 5'-(tetrahydrogen triphosphate), P''-[2-(2-methyloxiranyl)ethyl] ester, trisodium salt (9CI) (CA INDEX NAME)

Absolute stereochemistry.

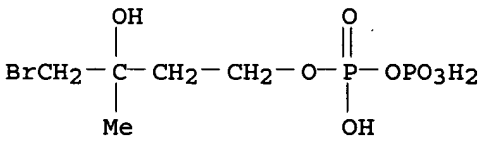


●3 Na

IT **259793-71-0P**, Triammonium 3-(bromomethyl)-3-hydroxybutyl diphosphate **259793-73-2P**, Tetraammonium 3-(bromomethyl)-3-hydroxybutyl triphosphate **259793-75-4P**, Triammonium .alpha.,.gamma.-bis(3-(bromomethyl)-3-hydroxybutyl) triphosphate **259793-77-6P**, Triammonium .gamma.-(3-hydroxy-3-(iodomethyl)butyl) uridine 5'-triphosphate
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(**prepn**. and cyclization to epoxide)

RN 259793-71-0 HCAPLUS

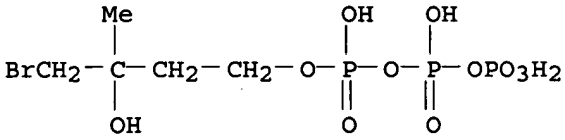
CN Diphosphoric acid, mono(4-bromo-3-hydroxy-3-methylbutyl) ester, triammonium salt (9CI) (CA INDEX NAME)



●3 NH_3

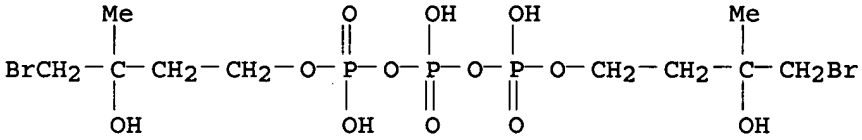
RN 259793-73-2 HCAPLUS

CN Triphosphoric acid, P-(4-bromo-3-hydroxy-3-methylbutyl) ester, tetraammonium salt (9CI) (CA INDEX NAME)



● 4 NH_3

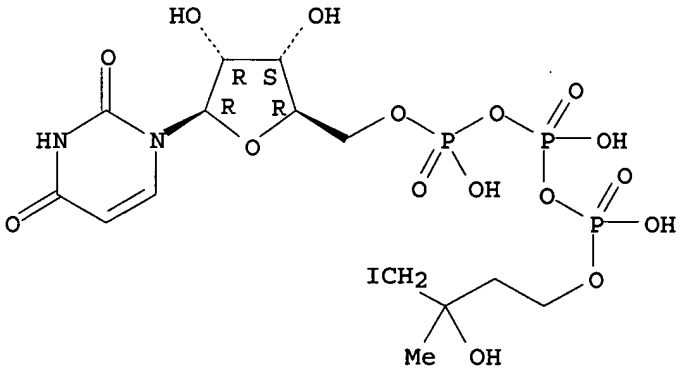
RN 259793-75-4 HCAPLUS
CN Triphosphoric acid, P,P''-bis(4-bromo-3-hydroxy-3-methylbutyl) ester, triammonium salt (9CI) (CA INDEX NAME)



● 3 NH_3

RN 259793-77-6 HCAPLUS
CN Uridine 5'-(tetrahydrogen triphosphate), P''-(3-hydroxy-4-iodo-3-methylbutyl) ester, triammonium salt (9CI) (CA INDEX NAME)

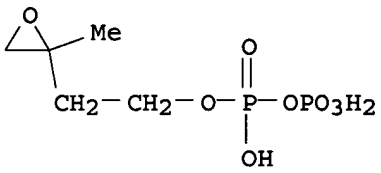
Absolute stereochemistry.



● 3 NH_3

IT **259793-67-4P**, 3,4-Epoxy-3-methylbutyl trisodium diphosphate
RL: ADV (Adverse effect, including toxicity); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); IMF (Industrial manufacture); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); **PREP (Preparation)**; USES (Uses)
(**prepn.**, toxicity and activation of T.gamma.9.delta.2

lymphocytes by)
RN 259793-67-4 HCAPLUS
CN Diphosphoric acid, mono[2-(2-methyloxiranyl)ethyl] ester, trisodium salt (9CI) (CA INDEX NAME)



●3 Na

REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 8 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2000:161292 HCAPLUS
DOCUMENT NUMBER: 132:194499
TITLE: Preparation of phosphohalohydrins and their applications in activating T.gamma.9.delta.2 lymphocytes of primates
INVENTOR(S): Belmant, Christian; Fournie, Jean-jacques; Bonneville, Marc; Peyrat, Marie-alix
PATENT ASSIGNEE(S): Institut National De La Sante Et De La Recherche Medicale, Fr.
SOURCE: PCT Int. Appl., 52 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000012516	A1	20000309	WO 1999-FR2058	19990827
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
FR 2782721	A1	20000303	FR 1998-10913	19980901
FR 2782721	B1	20001103		
AU 9954266	A1	20000321	AU 1999-54266	19990827
EP 1109817	A1	20010627	EP 1999-940247	19990827
EP 1109817	B1	20020605		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
AT 218576	E	20020615	AT 1999-940247	19990827
JP 2002523513	T2	20020730	JP 2000-567538	19990827

PRIORITY APPLN. INFO.: FR 1998-10913 A 19980901

WO 1999-FR2058 W 19990827

OTHER SOURCE(S): CASREACT 132:194499

AB The invention concerns compds. comprising at least a phosphohalohydrin group of formula XCH2CR1(OH)(CH2)nOP(O)(O-Cat+)OP(O)(O-Cat+)O- (X = I, Br, Cl; R1 = Me, Et; Cat+ = org. or mineral cation; n = 2-20). The invention also concerns their prepn. methods and applications, particularly in therapy and for activating T.gamma.9.delta.2 lymphocytes of primates. For example, the Na salt of 3-(bromomethyl)-3-hydroxybutyl diphosphate was prepd. in 3 steps: (1) prepn. of 3-methyl-3-butenyl tosylate from tosyl chloride and isopentenol; (2) prepn. of the ammonium salt of 3-methyl-3-butenyl diphosphate from tris(tetrabutylammonium) hydrogen pyrophosphate and 3-methyl-3-butenyl tosylate; and (3) the bromination of the 3-methyl-3-butenyl diphosphate by bromine water.

IC ICM C07F009-09
ICS C07H019-10; C12N005-06; A61K031-66; A61K049-00

CC 29-7 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 1

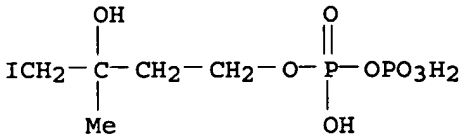
IT **259793-79-8P**, 3-Hydroxy-3-(iodomethyl)butyl trisodium diphosphate **259793-80-1P**, 3-(Chloromethyl)-3-hydroxybutyl trisodium diphosphate **259793-81-2P**, 3-(Bromomethyl)-3-hydroxybutyl tetrasodium triphosphate **259793-82-3P**, 3-Hydroxy-3-(iodomethyl)butyl tetrasodium triphosphate **259793-83-4P**, .alpha.,.gamma.-Bis(3-(bromomethyl)-3-hydroxybutyl) trisodium triphosphate **259793-84-5P**, .alpha.,.gamma.-Bis(3-hydroxy-3-(iodomethyl)butyl) trisodium triphosphate **259793-85-6P**, .gamma.-(3-Hydroxy-3-(iodomethyl)butyl) trisodium uridine 5'-triphosphate **259793-86-7P**, .alpha.,.beta.-Bis(3-(bromomethyl)-3-hydroxybutyl) disodium diphosphate
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); IMF (Industrial manufacture); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); **PREP (Preparation)**; USES (Uses)
(**prepn.** and activation of T.gamma.9.delta.2 lymphocytes by)

IT **259793-78-7P**, 3-(Bromomethyl)-3-hydroxybutyl trisodium diphosphate
RL: ADV (Adverse effect, including toxicity); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); IMF (Industrial manufacture); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); **PREP (Preparation)**; USES (Uses)
(**prepn.**, toxicity and activation of T.gamma.9.delta.2 lymphocytes by)

IT **259793-79-8P**, 3-Hydroxy-3-(iodomethyl)butyl trisodium diphosphate **259793-80-1P**, 3-(Chloromethyl)-3-hydroxybutyl trisodium diphosphate **259793-81-2P**, 3-(Bromomethyl)-3-hydroxybutyl tetrasodium triphosphate **259793-82-3P**, 3-Hydroxy-3-(iodomethyl)butyl tetrasodium triphosphate **259793-83-4P**, .alpha.,.gamma.-Bis(3-(bromomethyl)-3-hydroxybutyl) trisodium triphosphate **259793-84-5P**, .alpha.,.gamma.-Bis(3-hydroxy-3-(iodomethyl)butyl) trisodium triphosphate **259793-85-6P**, .gamma.-(3-Hydroxy-3-(iodomethyl)butyl) trisodium uridine 5'-triphosphate **259793-86-7P**, .alpha.,.beta.-Bis(3-(bromomethyl)-3-hydroxybutyl) disodium diphosphate
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); IMF (Industrial manufacture); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); **PREP (Preparation)**; USES (Uses)
(**prepn.** and activation of T.gamma.9.delta.2 lymphocytes by)

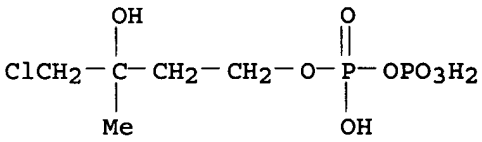
RN 259793-79-8 HCAPLUS

CN Diphosphoric acid, mono(3-hydroxy-4-iodo-3-methylbutyl) ester, trisodium salt (9CI) (CA INDEX NAME)



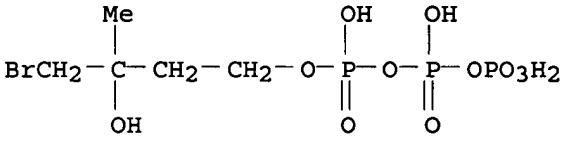
●3 Na

RN 259793-80-1 HCAPLUS
CN Diphosphoric acid, mono(4-chloro-3-hydroxy-3-methylbutyl) ester, trisodium salt (9CI) (CA INDEX NAME)



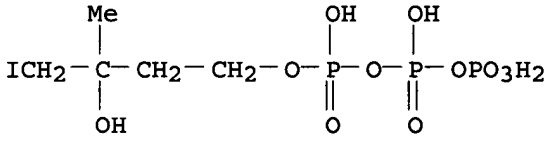
●3 Na

RN 259793-81-2 HCAPLUS
CN Triphosphoric acid, P-(4-bromo-3-hydroxy-3-methylbutyl) ester, tetrasodium salt (9CI) (CA INDEX NAME)



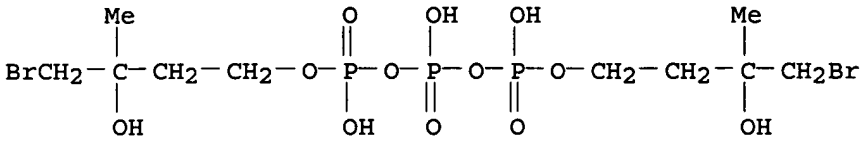
●4 Na

RN 259793-82-3 HCAPLUS
CN Triphosphoric acid, P-(3-hydroxy-4-iodo-3-methylbutyl) ester, tetrasodium salt (9CI) (CA INDEX NAME)



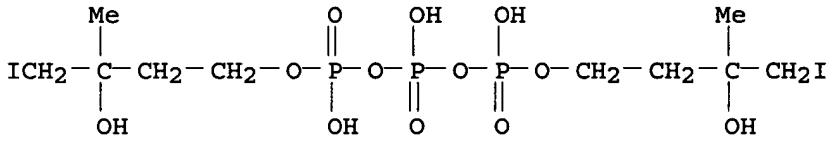
●4 Na

RN 259793-83-4 HCAPLUS
CN Triphosphoric acid, P,P''-bis(4-bromo-3-hydroxy-3-methylbutyl) ester, trisodium salt (9CI) (CA INDEX NAME)



●3 Na

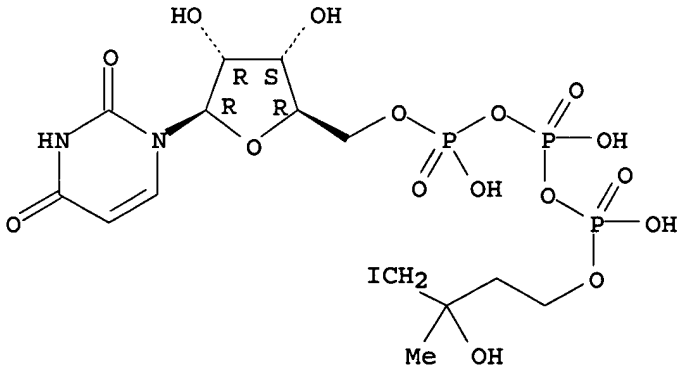
RN 259793-84-5 HCAPLUS
CN Triphosphoric acid, P,P''-bis(3-hydroxy-4-iodo-3-methylbutyl) ester, trisodium salt (9CI) (CA INDEX NAME)



●3 Na

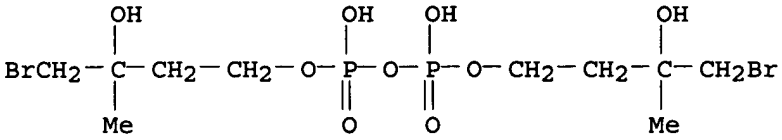
RN 259793-85-6 HCAPLUS
CN Uridine 5'-(tetrahydrogen triphosphate), P''-(3-hydroxy-4-iodo-3-methylbutyl) ester, trisodium salt (9CI) (CA INDEX NAME)

Absolute stereochemistry.



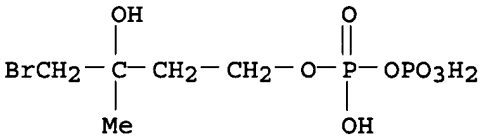
●3 Na

RN 259793-86-7 HCAPLUS
CN Diphosphoric acid, P,P'-bis(4-bromo-3-hydroxy-3-methylbutyl) ester, disodium salt (9CI) (CA INDEX NAME)



●2 Na

IT **259793-78-7P**, 3-(Bromomethyl)-3-hydroxybutyl trisodium diphosphate
RL: ADV (Adverse effect, including toxicity); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); IMF (Industrial manufacture); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); **PREP (Preparation)**; USES (Uses)
(**prepn.**, toxicity and activation of T.gamma.9.delta.2 lymphocytes by)
RN 259793-78-7 HCAPLUS
CN Diphosphoric acid, mono(4-bromo-3-hydroxy-3-methylbutyl) ester, trisodium salt (9CI) (CA INDEX NAME)



●3 Na

REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 9 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1995:168920 HCAPLUS
DOCUMENT NUMBER: 122:100378
TITLE: Mechanism of Mevalonate Pyrophosphate Decarboxylase: Evidence for a Carbocationic Transition State
AUTHOR(S): Dhe-Paganon, Sirano; Magrath, Joe; Abeles, Robert H.
CORPORATE SOURCE: Graduate Department of Biochemistry, Brandeis University, Waltham, MA, 02254, USA
SOURCE: Biochemistry (1994), 33(45), 13355-62
CODEN: BICHAW; ISSN: 0006-2960
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Mevalonate pyrophosphate decarboxylase catalyzes the decarboxylation of mevalonate pyrophosphate to isopentyl pyrophosphate. The mechanism of action of this enzyme was investigated to elucidate the mechanism of inhibition by 3-hydroxy-3-(fluoromethyl)-5-pyrophosphopentanoic acid (II). It was previously found that II is a competitive inhibitor (Ki = 0.01 .mu.M) of the enzyme reaction [Reardon, J. E., & Abeles, R. H. (1987) Biochem. 26, 4717-4722; Nave, J. F., d'Orchymont, H., Ducep, J. B., Piriou, F., & Jung, M. J. (1985) Biochem. J. 227, 247-254]. We have now obsd. that II is decarboxylated 2500-fold more slowly than mevalonate

pyrophosphate (3-hydroxy-3-methyl-5-pyrophosphopentanoic acid, I). The enzyme was exposed to satg. concns. of II and ATP and then passed through a Penefsky column to remove excess substrate. The enzyme was denatured immediately upon emerging from the Penefsky column. Nearly 1 equiv of both 3-phospho-3-(fluoromethyl)-5-pyrophosphopentanoic acid and ADP was bound to the enzyme. 3-Hydroxy-5-pyrophosphopentanoic acid (III) is phosphorylated at the secondary hydroxyl group and released from the enzyme without decarboxylation. This reaction is 30-fold slower than the rate of decarboxylation of I. The introduction of the 3-fluoromethyl group as well as the removal of the 3-Me group results in low rates of decarboxylation. These substrate analogs have decreased electron d. relative to the tertiary carbon of the substrate. Therefore, the transition state of the decarboxylation step has considerable carbocationic character. Further support for the carbocationic transition state is provided by the finding that N-methyl-N-carboxymethyl-2-pyrophosphoethanolamine (IV) inhibits the enzyme reaction with Ki = 0.75 .mu.M. IV is probably a transition-state analog in which the pos. charged nitrogen atom is analogous to the carbocation.

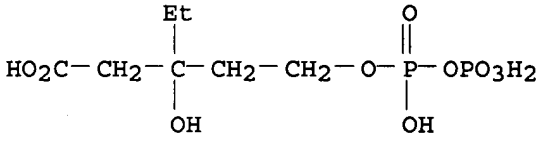
CC 7-4 (Enzymes)

IT 160556-82-1P 160556-83-2P 160556-86-5P **160556-89-8P**
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(prepn. of)

IT **160556-89-8P**
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(prepn. of)

RN 160556-89-8 HCAPLUS

CN 2,4-Dioxa-1,3-diphosphanonan-9-oic acid, 7-ethyl-1,1,3,7-tetrahydroxy-, 1,3-dioxide, lithium salt (9CI) (CA INDEX NAME)



● x Li

L9 ANSWER 10 OF 22 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1993:539564 HCAPLUS

DOCUMENT NUMBER: 119:139564

TITLE: Biosynthesis of Archaebacterial lipids in Halobacterium halobium and Methanobacterium thermoautotrophicum

AUTHOR(S): Zhang, Donglu; Poulter, C. Dale

CORPORATE SOURCE: Dep. Chem., Univ. Utah, Salt Lake City, UT, 84112, USA

SOURCE: J. Org. Chem. (1993), 58(15), 3919-22
CODEN: JOCEAH; ISSN: 0022-3263

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The core membrane lipids in archaebacteria are isoprenoid ether derivs., e.g. I, of glycerol instead of fatty acid esters found in other organisms. Activities for three key enzymes in membrane lipid biosynthesis, isopentenyl diphosphate (IPP) isomerase, geranylgeranyl diphosphate (GGPP) synthase, and 3-O-geranylgeranylglyceryl phosphate (GGGP) synthase were found in the cytosolic fractions of cell-free homogenates from the strict

anaerobe Methanobacterium thermoautotrophicum and the extreme halophile Halobacterium halobium. The substrate selectivities of GGGP synthase from both sources were similar and indicate a common pathway for biosynthesis of the isoprenoid compds. in core membrane lipids from methanogenic and halophilic archaebacteria.

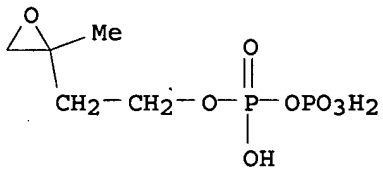
CC 30-20 (Terpenes and Terpenoids)
Section cross-reference(s): 7

IT 19622-70-9P, (R)-[14C]-Glycerol 98755-13-6P **115914-67-5P**
115914-68-6P 149221-92-1P, [32P]-Dihydroxyacetone phosphate
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(**prepn.** and inhibition by, of isopentenyl diphosphate isomerase)

IT **115914-67-5P**
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(**prepn.** and inhibition by, of isopentenyl diphosphate isomerase)

RN 115914-67-5 HCAPLUS

CN Diphosphoric acid, mono[2-(2-methyloxiranyl)ethyl] ester (9CI) (CA INDEX NAME)

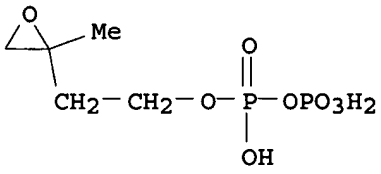


L9 ANSWER 11 OF 22 HCAPLUS COPYRIGHT 2002 ACS

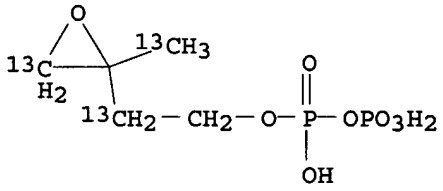
ACCESSION NUMBER: 1992:587103 HCAPLUS
DOCUMENT NUMBER: 117:187103
TITLE: Isopentenyl-diphosphate isomerase: irreversible inhibition by 3-methyl-3,4-epoxybutyl diphosphate
AUTHOR(S): Lu, Xiang J.; Christensen, Dale J.; Poulter, C. Dale
CORPORATE SOURCE: Dep. Chem., Univ. Utah, Salt Lake City, UT, 84112, USA
SOURCE: Biochemistry (1992), 31(41), 9955-60
CODEN: BICHAW; ISSN: 0006-2960
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Isopentenyl diphosphate isomerase (EC 5.3.3.2) (I) catalyzes the 1,3-allylic rearrangement of the homoallylic substrate, isopentenyl diphosphate, to its allylic isomer, dimethylallyl diphosphate. The incubation of yeast I with 3-methyl-3,4-epoxybutyl diphosphate (II) resulted in a time-dependent 1st-order loss of activity characteristics of an active-site-directed irreversible process, where k2 = 0.63 min-1 and Ki = 0.37 .mu.M. A 1:1 covalent enzyme-inhibitor (E-I) complex was formed upon incubation with [1-14C]II. Inhibited I was treated with trypsin to give 2 radioactive fragments, which were purified by reversed-phase HPLC on a C18 column. The modified amino acid in each fragment was identified as Cys-139 by sequencing the radiolabeled peptides. The incubation of I with [2,4,5-13C3]II gave a 13C-labeled E-I complex. A 1H-13C heteronuclear multiquantum correlation spectrum had strong cross-peaks at 1.2/28 and 2.9/48 ppm, which were assigned to the labeled Me group and C4 methylene group, resp., of II. In addn., a weak signal at 2.17/42 ppm may be from the C2 methylene group. A comparison of these chem. shifts with those of a synthetic adduct isolated from treatment of II with cysteine indicated that Cys-139 attacks the C4 atom of II to generate a thioether linkage between the enzyme and the inhibitor.

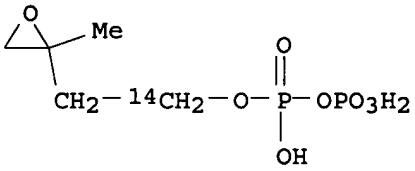
CC 7-3 (Enzymes)
IT **115914-67-5**
RL: BIOL (Biological study)
(isopentenyl diphosphate isomerase inhibition by, mechanism of, active site cysteine-139 modification in relation to)
IT **143445-82-3P 143445-84-5P**
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(**prepn**. and isopentenyl diphosphate isomerase inhibition by)
IT **115914-67-5**
RL: BIOL (Biological study)
(isopentenyl diphosphate isomerase inhibition by, mechanism of, active site cysteine-139 modification in relation to)
RN 115914-67-5 HCAPLUS
CN Diphosphoric acid, mono[2-(2-methyloxiranyl)ethyl] ester (9CI) (CA INDEX NAME)



IT **143445-82-3P 143445-84-5P**
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(**prepn**. and isopentenyl diphosphate isomerase inhibition by)
RN 143445-82-3 HCAPLUS
CN Diphosphoric acid, mono[2-[2-(methyl-13C)oxiranyl-3-13C]ethyl-2-13C] ester (9CI) (CA INDEX NAME)



RN 143445-84-5 HCAPLUS
CN Diphosphoric acid, mono[2-(2-methyloxiranyl)ethyl-1-14C] ester (9CI) (CA INDEX NAME)



L9 ANSWER 12 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1988:524850 HCAPLUS
DOCUMENT NUMBER: 109:124850
TITLE: Isopentenyl-diphosphate isomerase: inactivation of the

enzyme with active-site-directed irreversible inhibitors and transition state analogs

AUTHOR(S): Muehlbacher, Manfred; Poulter, C. Dale
CORPORATE SOURCE: Dep. Chem., Univ. Utah, Salt Lake City, UT, 84112, USA
SOURCE: Biochemistry (1988), 27(19), 7315-28
CODEN: BICHAW; ISSN: 0006-2960
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Seven analogs of isopentenyl diphosphate and dimethylallyl diphosphate contg. F, epoxy, and ammonium functional groups irreversibly inhibited isopentenyl diphosphate isomerase (EC 5.3.3.2) from Claviceps purpurea. Inactivation kinetics, substrate protection studies, and labeling expts. demonstrated that the analogs interacted stoichiometrically with the active site of the enzyme. Radioactive enzyme-inactivator complexes were stable to extended dialysis and treatment with chaotropic reagents. The complexes resulting from inactivation of isomerase by 3-(fluoromethyl)-3-buten-1-yl diphosphate (I) and 3,4-epoxy-3-methyl-1-Bu diphosphate were also stable to ion-exchange chromatog. and gel electrophoresis. Stoichiometric release of F- occurred during inactivation of isomerase with I. This observation was consistent with SN2 or SN2' displacement of F by an active-site nucleophile with concomitant covalent attachment of the inactivator to the enzyme. 2-(Dimethylamino)ethyl diphosphate (II) formed a stable noncovalent complex with isomerase with a dissocn. const. of < 1.2 .times. 10-10M. The enzyme-inhibitor complex was stable in 6M urea, but the inhibitor was partially released upon treatment with SDS and 2-mercaptoethanol at 37.degree. for 1 h. The results indicated that II is a transition-state/reactive intermediate analog where the pos. charged ammonium group mimics a tertiary carbocationic species in the enzyme-catalyzed reaction.

CC 7-3 (Enzymes)

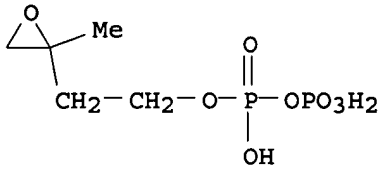
IT 104072-31-3P 115914-80-2P 115914-81-3P **115914-82-4P**
115914-83-5P 115914-84-6P 115914-85-7P
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(**prepn**. and isopentenyl diphosphate isomerase of Claviceps purpurea inactivation by)

IT **115914-67-5P** 115914-68-6P 115914-69-7P
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(**prepn**. and kinetics of isopentenyl diphosphate isomerase of Claviceps purpurea inactivation by)

IT **115914-82-4P**
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(**prepn**. and isopentenyl diphosphate isomerase of Claviceps purpurea inactivation by)

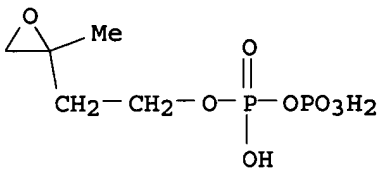
RN 115914-82-4 HCAPLUS

CN Diphosphoric acid, labeled with phosphorus-32, mono[2-(2-methyloxiranyl)ethyl] ester (9CI) (CA INDEX NAME)

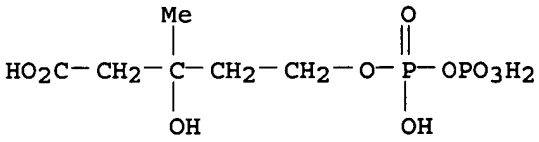


IT **115914-67-5P**
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(**prepn**. and kinetics of isopentenyl diphosphate isomerase of Claviceps purpurea inactivation by)

RN 115914-67-5 HCAPLUS
CN Diphosphoric acid, mono[2-(2-methyloxiranyl)ethyl] ester (9CI) (CA INDEX NAME)



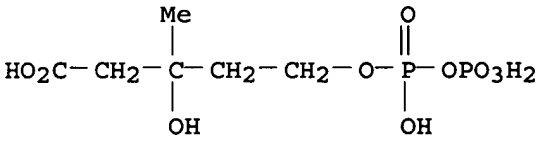
L9 ANSWER 13 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1988:108588 HCAPLUS
DOCUMENT NUMBER: 108:108588
TITLE: Studies on pig liver mevalonate-5-diphosphate decarboxylase
AUTHOR(S): Chiew, Yoke Eng; O'Sullivan, William J.; Lee, Choy Soong
CORPORATE SOURCE: Sch. Biochem., Univ. New South Wales, Kensington, 2033, Australia
SOURCE: Biochim. Biophys. Acta (1987), 916(3), 271-8
CODEN: BBACAQ; ISSN: 0006-3002
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A procedure in which 3 sequential enzymes of cholesterol biosynthesis, mevalonate kinase (EC 2.7.1.36), phosphomevalonate kinase (EC 2.7.4.2) and mevalonate-5-diphosphate decarboxylase (EC 4.1.1.33), from pig liver, could be purified in 1 operation is described. Mevalonate kinase and phosphomevalonate kinase were utilized for the enzymic synthesis of mevalonate 5-diphosphate (both 1-14C-labeled and unlabeled), the substrate for mevalonate-5-diphosphate decarboxylase, using excess free ATP. A radioactive assay for the enzyme, based on the release of 14CO2 from [1-14C]mevalonate 5-diphosphate, was developed. The assay allowed reassessment of the metal and nucleotide specificity of the decarboxylase. ATP could be partially replaced by GTP and ITP, but no activity was obsd. with CTP, UTP, or TTP. Apparent activation of the enzyme by ATP was obsd. as found previously for mevalonate kinase and for phosphomevalonate kinase. The presence of 1 mM excess free ATP, above that complexed as the substrate MgATP, decreased the Km for MgATP from 0.45 mM to 0.15 mM. MgADP acted as a competitive inhibitor with respect to MgATP.
CC 7-2 (Enzymes)
IT **1492-08-6P** 113305-27-4P
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(**prepn**. of, enzymic, for mevalonate diphosphate decarboxylase detn.)
IT **1492-08-6P**
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(**prepn**. of, enzymic, for mevalonate diphosphate decarboxylase detn.)
RN 1492-08-6 HCAPLUS
CN 2,4-Dioxa-1,3-diphosphanonan-9-oic acid, 1,1,3,7-tetrahydroxy-7-methyl-, 1,3-dioxide (9CI) (CA INDEX NAME)



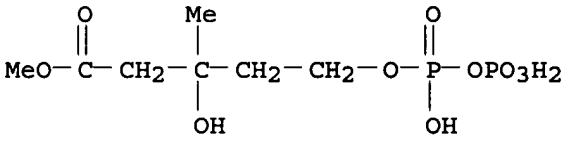
L9 ANSWER 14 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1987:454274 HCAPLUS
DOCUMENT NUMBER: 107:54274
TITLE: Inhibition of cholesterol biosynthesis by fluorinated mevalonate analogs
AUTHOR(S): Reardon, John E.; Abeles, Robert H.
CORPORATE SOURCE: Grad. Dep. Biochem., Brandeis Univ., Waltham, MA, 02254, USA
SOURCE: Biochemistry (1987), 26(15), 4717-22
CODEN: BICHAW; ISSN: 0006-2960
DOCUMENT TYPE: Journal
LANGUAGE: English

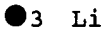
AB The conversion of mevalonate to cholesterol in rat liver homogenates (50% inhibitory concn. = 0.01-1.0 mM) is inhibited by 6-mono- (I), 6,6-di- (II), and 6,6,6-trifluoromevalonate (III), as well as 4,4-difluoromevalonate (IV). Addn. of compd. I, III, or IV to rat liver homogenates results in the accumulation of 5-phospho- and 5-pyrophosphomevalonate. The conversion of isopentenyl pyrophosphate to cholesterol is not inhibited by the fluorinated analogs. Thus, the decarboxylation of mevalonate 5-pyrophosphate is apparently inhibited. Rat liver homogenates catalyze the phosphorylation of I and III. The inhibition of the decarboxylation of mevalonate 5-pyrophosphate by I and III is demonstrated directly with partially purified decarboxylase. Compd. I is a remarkably effective inhibitor of the decarboxylation (Ki = 10 nM). It is likely that the phosphorylated or phyrophosphorylated forms of all inhibitors tested are responsible for inhibition. A chem. method for the synthesis of mevalonate 5-pyrophosphate is also described.

CC 6-1 (General Biochemistry)
Section cross-reference(s): 26
IT **1492-08-6P**
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(**prepn**. and cholesterol formation by liver inhibition by)
IT **108868-99-1P**
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**
(**prepn**. and demethylation of)
IT **108869-00-7P**
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(**prepn**. and lithium removal from)
IT **108869-01-8P** 108869-03-0P
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(**prepn**. of)
IT **1492-08-6P**
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(**prepn**. and cholesterol formation by liver inhibition by)
RN 1492-08-6 HCAPLUS
CN 2,4-Dioxa-1,3-diphosphanonan-9-oic acid, 1,1,3,7-tetrahydroxy-7-methyl-, 1,3-dioxide (9CI) (CA INDEX NAME)

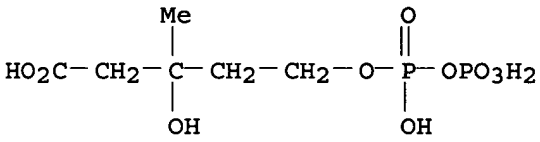


IT **108868-99-1P**
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**
(prepn. and demethylation of)
RN 108868-99-1 HCAPLUS
CN 2,4-Dioxa-1,3-diphosphanonan-9-oic acid, 1,1,3,7-tetrahydroxy-7-methyl-, methyl ester, 1,3-dioxide, trilithium salt (9CI) (CA INDEX NAME)

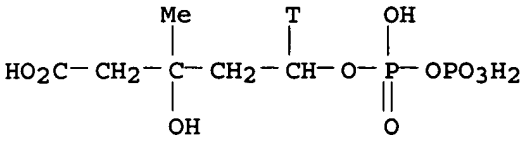




IT **108869-00-7P**
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(prepn. and lithium removal from)
RN 108869-00-7 HCAPLUS
CN 2,4-Dioxa-1,3-diphosphanonan-9-oic acid, 1,1,3,7-tetrahydroxy-7-methyl-, 1,3-dioxide, tetralithium salt (9CI) (CA INDEX NAME)



IT **108869-01-8P**
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(prepn. of)
RN 108869-01-8 HCAPLUS
CN 2,4-Dioxa-1,3-diphosphanonan-9-oic-5-t acid, 1,1,3,7-tetrahydroxy-7-methyl-, 1,3-dioxide (9CI) (CA INDEX NAME)

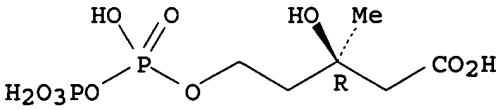


L9 ANSWER 15 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1986:474858 HCAPLUS
DOCUMENT NUMBER: 105:74858
TITLE: Mevalonate-5-diphosphate decarboxylase: stereochemical course of ATP-dependent phosphorylation of mevalonate 5-diphosphate
AUTHOR(S): Iyengar, Radha; Cardemil, Emilio; Frey, Perry A.
CORPORATE SOURCE: Dep. Quim., Univ. Santiago, Santiago, Chile
SOURCE: Biochemistry (1986), 25(16), 4693-8
CODEN: BICHAW; ISSN: 0006-2960
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Chicken liver mevalonate 5-diphosphate carbxoylase catalyzes the reaction of mevalonate 5-diphosphate (MVADP) with ATP to produce isopentenyl diphosphate, ADP, CO2, and inorg. phosphate. The overall reaction involves an anti elimination of the tertiary hydroxyl and carboxyl groups. To investigate the mechanism for transfer of the terminal phosphoryl group of ATP to the C-3 O atom of MVADP, the reaction was carried out using stereospecifically labeled (SP)-adenosine 5'-O-(3-thio[3-17O2,18O]triphosphate) ([.gamma.-17O2,18O]ATP.gamma.S) in place of ATP. The configuration of the [17O,18O]thiophosphate produced was found to be RP, corresponding to overall inversion of configuration at the P atom in the thiophosphoryl group transfer step. This result was consistent with the direct transfer of the thiophosphoryl group from (SP)-[.gamma.-17O2,18O]ATP.gamma.S to MVADP at the active site. The result did not indicate the involvement of a covalent thiophosphoryl-enzyme on the reaction pathway.

CC 7-4 (Enzymes)
IT 56-65-5, reactions **103025-21-4**
RL: RCT (Reactant)
(reaction of, with mevalonate diphosphate decarboxylase, stereochem. of)
IT **103025-21-4**
RL: RCT (Reactant)
(reaction of, with mevalonate diphosphate decarboxylase, stereochem. of)
RN 103025-21-4 HCAPLUS
CN 2,4-Dioxa-1,3-diphosphanonan-9-oic acid, 1,1,3,7-tetrahydroxy-7-methyl-, 1,3-dioxide, (R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

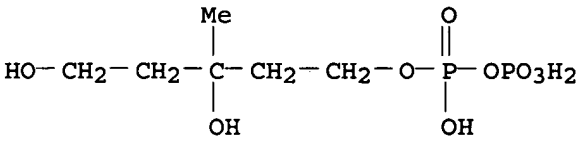


L9 ANSWER 16 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1985:574788 HCAPLUS

DOCUMENT NUMBER: 103:174788
TITLE: Separation of mevalonate phosphates and isopentenyl pyrophosphate by thin-layer chromatography and of short-chain prenyl phosphates by ion-pair chromatography on a high-performance liquid chromatography column
AUTHOR(S): Beyer, Peter; Kreuz, Klaus; Kleinig, H.
CORPORATE SOURCE: Inst. Biol., Univ. Freiburg, Freiburg, D-7800, Fed. Rep. Ger.
SOURCE: Methods Enzymol. (1985), 111(Steroids Isoprenoids, Part B), 248-52
CODEN: MENZAU; ISSN: 0076-6879
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A 2-dimensional TLC system is described that can sep. clearly mevalonate, mevalonate phosphate, mevalonate pyrophosphate, and isopentenyl pyrophosphate. The 1st dimension developer is PrOH:NH3 (25% aq. soln.):H2O (6:3:1), and the 2nd dimension developer is iso-BuOH:AcOH:H2O (40:10:13). The compds. can be detected with a radioscanner or by autoradiog. and quantified by scintillation counting. A method is also presented which allows the sepn. of geranyl, farnesyl, and geranylgeranyl mono- and pyrophosphates very rapidly by ion-pair reversed-phase HPLC. The ion-pair reagent contains tetrabutylammonium sulfate 6.8 g and K2HPO4 5.5 g, adjusted to pH 8.0 with KOH in a total vol. of 100 mL H2O. The reagent is filtered through Millipore HA filters (0.45 .mu.m). For sepn., a HPLC system equipped with a C18 reversed-phase column (.mu.Bondapak C18) and a radio column chromatog. monitor with a glass scintillator is used. The column is developed with a 15-min linear gradient ranging from 15% nonpolar solvent/85% polar solvent to 70% nonpolar solvent/30% polar solvent at a flow rate of 1.3 mL/min. Under these conditions, the decrease in polarity of the eluent is paralleled by a decrease in the concn. of ion-pair reagent which allows the resoln. of mono- and pyrophosphates of the higher homologs.

CC 9-3 (Biochemical Methods)
IT 150-97-0 358-71-4 89600-14-6 **98775-29-2**
RL: PROC (Process)
(sepn. of, by TLC)
IT **98775-29-2**
RL: PROC (Process)
(sepn. of, by TLC)
RN 98775-29-2 HCAPLUS
CN Diphosphoric acid, mono(3,5-dihydroxy-3-methylpentyl) ester (9CI) (CA INDEX NAME)



L9 ANSWER 17 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1979:570587 HCAPLUS
DOCUMENT NUMBER: 91:170587
TITLE: Effect of phenyl and phenolic acids on mevalonate-5-phosphate kinase and mevalonate-5-pyrophosphate decarboxylase of the rat brain
AUTHOR(S): Bhat, Charavu Shama; Ramasarma, T.

CORPORATE SOURCE: Dep. Biochem., Indian Inst. Sci., Bangalore, India
SOURCE: J. Neurochem. (1979), 32(5), 1531-7
CODEN: JONRA9; ISSN: 0022-3042
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Ph and phenolic acids inhibited metab. of mevalonate in rat brain by inhibition of mevalonate 5-pyrophosphate decarboxylase (EC 4.1.1.33) (I); phenolic acids also inhibited mevalonate 5-phosphate kinase (EC 2.7.4.2) (II) on preincubation. Inhibition kinetics showed that p-coumaric and isoferulic acids competed with the substrates, mevalonate 5-phosphate or mevalonate 5-pyrophosphate, whereas other acids showed a noncompetitive type of inhibition. Chlorophenoxyisobutyrate did not affect I or II.

CC 7-3 (Enzymes)

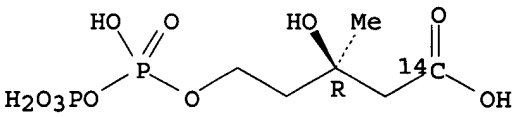
IT 71816-03-0P **71816-04-1P**
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(prepn. of)

IT **71816-04-1P**
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(prepn. of)

RN 71816-04-1 HCAPLUS

CN 2,4-Dioxa-1,3-diphosphanonan-9-oic-9-14C acid, 1,1,3,7-tetrahydroxy-7-methyl-, 1,3-dioxide, (R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L9 ANSWER 18 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1976:1328 HCAPLUS
DOCUMENT NUMBER: 84:1328
TITLE: Phosphorylation of homomevalonic acid by an enzyme system from rat liver
AUTHOR(S): Beedle, Alan S.; Rees, Huw H.; Goodwin, Trevor W.
CORPORATE SOURCE: Dep. Biochem., Univ. Liverpool, Liverpool, Engl.
SOURCE: Biochem. Soc. Trans. (1975), 3(5), 738-9
CODEN: BCSTB5
DOCUMENT TYPE: Journal
LANGUAGE: English

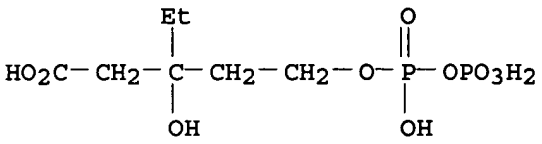
AB Incubation of mevalonic acid with rat liver postmicrosomal supernatant yielded mainly farnesyl pyrophosphate, and also mevalonate 5-phosphate, mevalonate 5-pyrophosphate, and isopentenyl pyrophosphate. Homomevalonic acid incubated under the same conditions gave homomevalonate 5-pyrophosphate, and some homomevalonate 5-phosphate. Homoisoprenoid pyrophosphates were not detected possibly because of the presence of an extra Me group at the C-3 creating steric hindrance around the C-3 OH group and preventing recognition by mevalonate 5-pyrophosphate anhydrodecarboxylase.

CC 6-1 (General Biochemistry)
Section cross-reference(s): 7

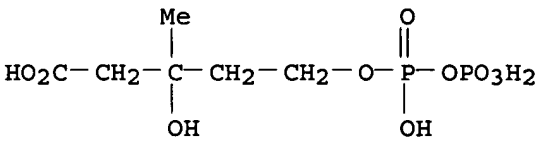
IT **58084-40-5P**
RL: MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); **PREP (Preparation)**
(formation of, by liver enzyme system)

IT **58084-40-5P**
RL: MFM (Metabolic formation); BIOL (Biological study); FORM (Formation,

nonpreparative); **PREP (Preparation)**
(formation of, by liver enzyme system)
RN 58084-40-5 HCAPLUS
CN 2,4-Dioxa-1,3-diphosphanonan-9-oic acid, 7-ethyl-1,1,3,7-tetrahydroxy-, 1,3-dioxide (9CI) (CA INDEX NAME)



L9 ANSWER 19 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1974:564916 HCAPLUS
DOCUMENT NUMBER: 81:164916
TITLE: Metabolism of mevalonic acid to phosphorylated intermediates in a cell-free extract from Nepeta cataria leaves
AUTHOR(S): Downing, Michael R.; Mitchell, Earl D.
CORPORATE SOURCE: Agric. Exp. Stn., Oklahoma State univ., Stillwater, Okla., USA
SOURCE: Phytochemistry (1974), 13(8), 1419-21
CODEN: PYTCAS
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A cell-free ext. was prepd. from leaves of N. cataria plants which converted mevalonic acid to mevalonic acid phosphate, mevalonic acid pyrophosphate, and isopentenyl pyrophosphate. These enzymes were in the 30,000 g supernatant. The activities were maximal at pH 7 and the formation of mevalonic acid pyrophosphate and isopentenyl pyrophosphate reached a max. after an incubation time of 180 min, whereas the level of mevalonic acid phosphate began to decrease after 90 min.
CC 6-1 (General Biochemistry)
Section cross-reference(s): 11
IT 358-71-4P 1189-94-2P **1492-08-6P**
RL: MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); **PREP (Preparation)**
(formation of, by Nepeta cataria leaves, mevalonic acid in relation to)
IT **1492-08-6P**
RL: MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); **PREP (Preparation)**
(formation of, by Nepeta cataria leaves, mevalonic acid in relation to)
RN 1492-08-6 HCAPLUS
CN 2,4-Dioxa-1,3-diphosphanonan-9-oic acid, 1,1,3,7-tetrahydroxy-7-methyl-, 1,3-dioxide (9CI) (CA INDEX NAME)



L9 ANSWER 20 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1971:400161 HCAPLUS

DOCUMENT NUMBER: 75:161
TITLE: Rate of acetate and mevalonate incorporation by extracts of Pinus pinaster seedlings
AUTHOR(S): Garcia-Peregrin, E.; Mayor, F.
CORPORATE SOURCE: Dep. Biochem., Univ. Granada, Granada, Spain
SOURCE: Rev. Espan. Fisiol. (1971), 27(1), 15-22
CODEN: REFIAS
DOCUMENT TYPE: Journal
LANGUAGE: English

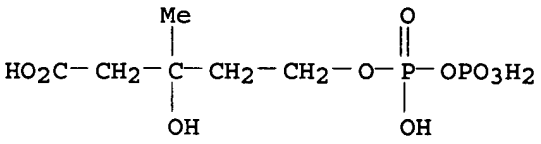
AB The conditions were studied for obtaining cell-free exts. of pine seedlings incorporating acetate and mevalonate. The whole sequence of reactions which relate acetate to active isoprene in pine seems to be identical to the pathway in animal cells and microorganisms. Acetate is incorporated by enzymes in the ext. and is transformed into mevalonic acid derivs. Incorporation occurs only when CoA-SH and glutathion are added. In the absence of CoA-SH, the reaction rate is very slow and its intensity is greatly reduced when NADPH is not supplied. Addn. of malonate has no effect on the reaction. Incorporation was demonstrated of mevalonate by cell-free exts. of P. pinaster seedlings. The addn. of F to the reaction mixt. to inhibit phosphates prevents its action on phospho- and pyrophosphomevalonic acid and allows a greater accumulation of intermediates and a better visualization of the reactions of the metabolic system. The rate of incorporation of mevalonate-1-14C and mevalonate-2-14C is extremely rapid. Highest levels of phospho- and pyrophosphomevalonate are found after 15-30 min. As incubation time increases (0-10 hr) the production of further metabolites (possibly geranyl or neryl pyrophosphate) also increases.

CC 2 (General Biochemistry)

IT 358-71-4P 1189-94-2P **1492-08-6P**
RL: MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); **PREP (Preparation)**
(formation of, in acetic acid metabolism by pine)

IT **1492-08-6P**
RL: MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); **PREP (Preparation)**
(formation of, in acetic acid metabolism by pine)

RN 1492-08-6 HCAPLUS
CN 2,4-Dioxa-1,3-diphosphanonan-9-oic acid, 1,1,3,7-tetrahydroxy-7-methyl-, 1,3-dioxide (9CI) (CA INDEX NAME)



L9 ANSWER 21 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1969:84400 HCAPLUS
DOCUMENT NUMBER: 70:84400
TITLE: Biosynthesis of cholesterol by the bovine aorta and the mechanism of action of .alpha.-(p-chlorophenoxy)isobutyric acid
AUTHOR(S): Walsh, Maria R.; Teal, Stephen W.; Gamble, Wilbert
CORPORATE SOURCE: Oregon State Univ., Corvallis, Oreg., USA
SOURCE: Arch. Biochem. Biophys. (1969), 130(1), 7-18
CODEN: ABBIA4
DOCUMENT TYPE: Journal

LANGUAGE: English

AB The nature and requirements for the biosynthesis of nonsaponifiable material (NSF) and cholesterol from acetate-2-14C, acetyl-1-14C CoA and mevalonate-2-14C by cell-free systems from bovine aorta were detd. Low radioactivity was incorporated into cholesterol with mevalonate as substrate. No conversion of acetate to NSF and cholesterol was observed; however, acetyl-CoA was converted to NSF. Bovine aorta cellfree systems were shown to convert mevalonate to mevalonic acid-5-phosphate and mevalonic acid-5-pyrophosphate. The majority of the radioactivity was incorporated into a compd. tentatively identified as a polar isoprenoid. Mevalonate conversion to NSF and cholesterol was inhibited by .alpha.-p-chlorophenoxyisobuty-rate (CPIB) and related compds. Mevalonate kinase was inhibited by CPIB. The inhibition of mevalonate incorporation was prevented by increasing the ATP concn. CPIB inhibited the biosynthesis of fatty acids by homogenates of bovine aorta and the conversion of acetate to CO2.

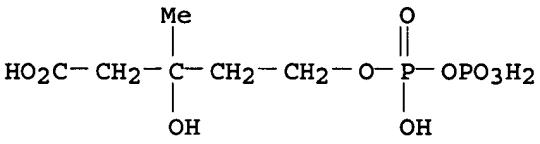
CC 2 (General Biochemistry)

IT 1189-94-2P **1492-08-6P**
RL: MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); **PREP (Preparation)**
(formation of, from mevalonic acid by arteries)

IT **1492-08-6P**
RL: MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); **PREP (Preparation)**
(formation of, from mevalonic acid by arteries)

RN 1492-08-6 HCAPLUS

CN 2,4-Dioxa-1,3-diphosphanonan-9-oic acid, 1,1,3,7-tetrahydroxy-7-methyl-, 1,3-dioxide (9CI) (CA INDEX NAME)



L9 ANSWER 22 OF 22 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1967:72582 HCAPLUS

DOCUMENT NUMBER: 66:72582

TITLE: Phosphorylated intermediates in the biosynthesis of terpenes in a soluble system (homogenate) of Pinus radiata seedlings

AUTHOR(S): Beytia Simpson, Enrique

SOURCE: An. Fac. Quim. Farm., Univ. Chile (1966), Volume Date 1965, 17, 119-23
CODEN: AFQFAU

DOCUMENT TYPE: Journal

LANGUAGE: Spanish

AB Cell-free exts. obtained by centrifugation of a homogenate prepd. from P. radiata seedlings incorporate labeled mevalonic acid into 5-phosphomevalonic acid, 5-pyrophosphomevalonic acid, and isopentenyl 1-pyrophosphate. Part of the radioactivity in the petroleum ether-sol. fraction was found after hydrolysis with N HCl, suggesting the formation of allyl pyrophosphates. Mevalonic acid kinase of these exts. is stereospecific with one of the enantiomorphic forms of mevalonic acid, is activated by Mn2+, and is inhibited by EDTA. 21 references.

CC 2 (General Biochemistry)

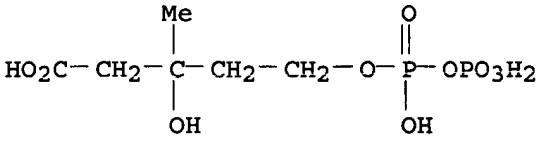
IT 358-72-5P **1492-08-6P**

RL: **PREP (Preparation)**
(formation by Pinus radiata, in terpene formation)

IT **1492-08-6P**
RL: **PREP (Preparation)**
(formation by Pinus radiata, in terpene formation)

RN 1492-08-6 HCAPLUS

CN 2,4-Dioxa-1,3-diphosphanonan-9-oic acid, 1,1,3,7-tetrahydroxy-7-methyl-, 1,3-dioxide (9CI) (CA INDEX NAME)



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L10  ANSWER 1 OF 3  HCAOLD  COPYRIGHT 2002 ACS
AN   CA65:9204f  CAOLD
TI   biosynthesis of cholesterol - (XX) steric course of decarboxylation of
     5-pyrophosphomevalonate and of the C to C bond formation in the
     biosynthesis of farnesyl pyrophosphate
AU   Cornforth, John W.; Cornforth, R. H.; Popjak, G. J.; Yengoyan, L. S.
IT    358-71-4    358-72-5    372-97-4    763-10-0  10371-61-6  10371-62-7
     10379-43-8  10379-45-0  10379-47-2  10379-48-3  10379-49-4  10502-22-4
     10502-23-5  10502-24-6  10518-49-7  10518-50-0  10529-91-6  10530-17-3
     13002-30-7  13048-01-6  13100-81-7  89798-87-8  92876-32-9
     94115-33-0

L10  ANSWER 2 OF 3  HCAOLD  COPYRIGHT 2002 ACS
AN   CA64:5460h  CAOLD
TI   stereochemistry of rubber biosynthesis
AU   Archer, Bernard L.; Barnard, D.; Cockbain, E. G.; Cornforth, J. W.;
     Cornforth, R. H.; Popjak, G. J.
IT    358-71-4    372-97-4   1492-08-6   5826-34-6
     5948-92-5

L10  ANSWER 3 OF 3  HCAOLD  COPYRIGHT 2002 ACS
AN   CA61:2959d  CAOLD
TI   synthesis of DL-mevalonic acid pyrophosphate
AU   Machleidt, Hans; Cohnen, E.; Tschesche, R.
IT   1492-08-6  33598-51-5  91675-20-6  91823-84-6  92062-91-4  92274-32-3
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